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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,191	07/31/2001	Eko N. Onggosanusi	TI-31513	4515
23494	7590	05/31/2006	EXAMINER KUMAR, PANKAJ	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			ART UNIT 2611	PAPER NUMBER

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/919,191	Applicant(s) ONGGOSANUSI ET AL.	
	Examiner Pankaj Kumar	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-9,16,19,22-26,33,34 and 37 is/are rejected.
- 7) ☒ Claim(s) 4,5,10-15,17,18,20,21,27-32,35 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/17/2006 have been fully considered but they are not persuasive.
2. As applicant has stated that they are reiterating their previous argument, the office is reiterating its previous response to their argument.
3. Applicant argues that "Examiner has failed to show that Robertson discloses different mappers or different mappings as required by each of the independent claims ...". This is not persuasive since the office has shown that Robertson in view of Ko teach the limitation.
4. Applicant argues that Ko cannot be combined with Robertson since Ko teaches completely different bits. This is not persuasive for a number of reasons. First, a bit is a bit, whether it is 0 or 1 and both Robertson and Ko have bits. Second, Robertson is using bits 0 and 1 and Ko is using bits 0 and 1 and thus both Robertson and Ko are using the same set of different bits. Third, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).
5. Applicant argues that although Ko teaches different mappers, "Claim 1, however, recites "applying a first coded bits-to-signal mapping to said coded bits to produce a first output signal" and "applying a second coded bits-to-signal mapping to the interleaved version of said coded bits.'" This is not persuasive since most, if not all, of these limitations are taught by Robertson.

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If any limitation remains, they are taught by secondary references as explained in the prior action.

6. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

7. Applicant argues at the bottom of page 10 that the combination of the references cited do not teach these limitations. This is not persuasive. The office showed in the prior action how the combination of the references taught the limitations. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

8. As per argument on page 11, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

9. Applicant also argues in the first paragraph on page 11 that there is no reason to combine since Ko only used a different mapper because the number of input bits are different. This is not

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persuasive. It would be obvious to combine especially given applicant's claims. When one interleaves, as applicant does, a different number of bits are obtained. The mapper that is connected to receive the interleaver data, as applicant has, would have to accept a different number of input bits. Ko shows that the mapper is different when there are a different number of input bits.

10. Applicant again argues in the second paragraph on page 11 that there is no suggestion to combine since Ko uses different input data. This is not persuasive since as discussed earlier, it would be obvious to combine especially given applicant's claims. When one interleaves, as applicant does, a different number of bits are obtained. The mapper that is connected to receive the interleaver data, as applicant has, would have to accept a different number of input bits. Ko shows that the mapper is different when there are a different number of input bits. Also, The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

11. As per applicant's argument at the end of page 11 to the top of page 12, the examiner cited the correct section. This section stated "code length is shortened", hence changing the code length. This section also discussed the impact of the "memory size". Applicant argues that there is nothing in this section related to separate or different signal mappers. This is not persuasive since other sections of Ko teach separate and different signal mappers and this is one of the sections in Ko that highlight the need for different mappers, such as having different code length

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or different number of input bits as discussed earlier. Also, applicant is responsible for overcoming the entire prior art, not just a portion of it.

Response to Amendment

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 16, 19, 22, 23, 34, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson IEEE Feb. 1998 vol. 16 no. 2 pages 206-218 in view of Ko USPN 5,703,580.

See prior action for details.

14. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson IEEE Feb. 1998 vol. 16 no. 2 pages 206-218 in view Ko as applied to claim 16 above, and further in view of Paik USPN 5,233,629. See prior action for details.

15. Claims 1-3, 6-7, 8, 25, 26, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson IEEE Feb. 1998 vol. 16 no. 2 pages 206-218 in view of Wei USPN 6,473,878 and Ko USPN 5,703,580. See prior action for details.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson IEEE Feb. 1998 vol. 16 no. 2 pages 206-218 in view of Wei USPN 6,473,878 and Ko USPN 5,703,580 and further in view of Paik USPN 5,233,629. See prior action for details.

Allowable Subject Matter

17. Claims 4, 5, 10-15, 17-18, 20, 21, 27-32, 35, 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

19. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Pankaj Kumar
Patent Examiner
Art Unit 2611

PK